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ASSOCIATION, SYNONYMITY, AND DIRECTIONALITY IN FALSE RECOGNITION.

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THIS DOCUMENT COMPRISES TWO EXPERIMENTS--(1) TO INVESTIGATE WHETHER RELATIONS OF SYNONYMITY HAVE SIMILAR EFFECTS TO THOSE OF ASSOCIATION AND (2) TO SEE WHETHER FALSE RECOGNITION IS DUE TO PROCESSES INVOLVED IN INITIAL CODING OF THE STIMULUS OR TO CONFUSION RESULTING FROM THE PRESENTATION OF ITS ASSOCIATE. WHEN ASKED TO INDICATE WHETHER EACH OF 200 ORALLY PRESENTED WORDS HAD APPEARED BEFORE (PLUS) OR NOT (MINUS), UNIVERSITY STUDENTS GAVE MORE PLUSSES TO COMMON ASSOCIATES AND SYNONYMS OF PRECEDING WORDS THAN TO CONTROL WORDS. IN A SECOND EXPERIMENT, FALSE REGOGNITION ERRORS WERE OBTAINED WHEN THE PRECEDING WORDS ASSOCIATIVELY ELICITED THE TEST WORDS AND WHEN THE ASSOCIATIVE RELATION WAS BIDIRECTIONAL BUT NOT WHEN ONLY THE TEST WORDS ELICITED THE PRECEDING WORDS. THE RESULTS OF THE SECOND EXPERIMENT WERE TAKEN AS AN INDICATION THAT INITIAL CODING OF WORDS CONTRIBUTES TO FALSE RECOGNITION AND THAT THE PHENOMENON IS NOT MERELY AN ARTIFACT OF TESTING FOR IT. THE OCCURRENCE OF FALSE RECOGNITION ERRORS WAS TAKEN AS SUPPORT FOR A CHARACTERIZATION OF WORDS AS COMPLEXES OF ATTRIBUTES OR FEATURES. (SEE RELATED DOCUMENT AL 001 270). (AUTHOR/DO)

Association, Synonymity, and Directionality in False Recognition

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When asked to indicate whether each of 200 orally presented words had appeared before (+) or not (-), students gave more plusses to common associates and synonyms of preceding words than to control words. In a second experiment, false recognition errors were obtained when the preceding words associatively elicited the test words and when the associative relation was bidirectional but not when only the test words elicited the preceding words. The results of the second experiment were taken as an indication that initial coding of words contributes to false recognition and that the phenomenon is not merely an artifact of testing for it. The occurrence of false recognition errors was taken as support for a characterization of words as complexes of attributes or features.

Association, Synonymity, and Directionality in False Recognition[1]

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Even the bulkiest dictionaries present vocabulary as a list of unrelated items. Linguists, however, have made it clear that although the lexical component of language manifests less systematicity than syntax or phonology, it nevertheless has much more structure than is suggested by the arrangement of words in dictionaries (e.g., Chomsky, 1965, especially ch. 4.; Katz and Fodor, 1963; Saussure, 1959; Weinreich, 1964). Saussure has emphasized that the properties of any one word are dependent not only on its relations with external events (referents) but also to a large extent on what other words are part of the vocabulary system. Within the generative approach to language (Chomsky, 1965) a theory of semantics has been developing which has as its central notion the cross-classification of words into syntactically relevant categories, such as animate-inanimate, and human-nonhuman.

Psychologists too have recognized that words are organized and they have concerned themselves with the analysis of the psychological processes underlying this organization and with its consequences in verbal behavior. Experiments on semantic generalization (Feather, 1965), clustering in free recall (e.g., Cofer, 1965), not to mention work on free and controlled associations (e.g., Deese, 1965), can all be viewed as reflecting this concern. In these areas of psychological investigation, there is a general tendency to explain findings by reference to associative bonds between words. Free associations have thus come a long way from their original use as a method for studying underlying mental processes to their present position as explanatory devices. The tacit assumption behind the use of associative data in an explanatory role is that free associations are directly traceable to specific past contingencies. Although contiguity relations no doubt play a role in determining responses in a free association task, one can readily

question the view that they are the only determinants. However, the concern of this paper is not directly with the determinants of associative responses, but rather with the limitations of free association data, whatever their causation, in explaining memory phenomena.

In particular our interest was aroused by a study of Underwood (1965) in which he used a method of continuous recognition originally introduced by Shepard and Teghtsoonian (1961). Underwood had Ss indicate for each of 200 words, presented by a tape recorder, whether it had occurred earlier in the list or not. He found that common associates of words which appeared earlier in the list were falsely recognized more often than control words.

The purpose of the first experiment to be reported below was to investigate whether relations of synonymity have similar effects to those of association. The constant use of paraphrasing in everyday life communication suggests that in coding for memory under normal conditions speakers retain primarily the semantic content of a message. Since synonyms have a large area of meaning in common, they would seem natural candidates for confusion in the kind of task used by Underwood. Of course, this experimental situation, unlike everyday life, puts a premium on verbatim coding, but it was reasoned that since associates proved to intrude in this situation synonyms certainly should.

The second experiment was suggested by Razran's study (1949) on semantic generalizations of conditioned responses. He found greater generalization when the test word strongly evoked, in a free association task, the conditioned word than when the conditioned word strongly evoked the test word. For instance, when a salivary response was conditioned to the word dog there was less generalization to the superordinate animal than to the subordinate terrier. In a free association task, subordinates tend to evoke superordinates more strongly than superordinates evoke subordinates. His finding led Razran to the conclusion that semantic generalization is not an automatic process taking place during original conditioning but rather is an artifact of subsequent testing. Using unidirectional and

bidirectional associates we attempted to see whether false recognition is due to processes involved in initial coding of the stimulus or to confusion resulting from the presentation of its associate.

Method

Subjects

There were 28 male university students in the first experiment and 34 female students in the second.

Materials and Procedure

Each of the two experiments contained 200 words which were recorded on magnetic tape at 10-sec intervals. Each word was recorded twice in immediate succession to make sure that it would be heard. The tape was played to groups of five or six *Ss*. For each word, *S* had to indicate by a + or - whether it was "old" or "new." *Ss* were instructed to guess when in doubt. The lists were constructed to contain three major categories of words: Preceding (P) words, Experimental (E) words, and Control (C) words. For each P word the list contained one or two E words, and for each E word one C word.

Experiment 1. The E words in the first experiment related to the P words in two ways: 24 as common associative responses (A's) and 25 as synonyms (S's). Table 1 presents the list of words used in this experiment. The words included as

Insert Table 1 about here

A's were given as responses to their respective stimuli in a free association test by 27%-72% of the 500 male college students Palermo and Jenkins (1964) used for their association norms. The words used as S's were given as synonyms by 30%-86% of the 50 students Jenkins and Palermo (1965) used for their synonym norms. As can be seen in Table 1, the E words were of four kinds: 15 A's and 15 S's had common P words (e.g., P: chair, A: table, S: seat), 4 A's were related to P's which had no obvious synonym (e.g., P: bed, A: sleep), 5 S's were related to P's which had no common associates (e.g., P: baby, S: infant), and in 5 cases the same E word was both an A and an S (e.g., P: carpet, A,S: rug).

Our procedure for selecting control words differed from that employed by

Underwood. Underwood's control words were common associates whose stimuli did not appear in the list. For instance, he used down as a control word because it is commonly given as a response to up, but up was not included in the list. This method does not provide a specific control word for each experimental word. Also, it implies that the only variable conceivably relevant to false recognition is associative connection--a stronger hypothesis than Underwood's experiment was designed to test. The large number of errors to the control words in Underwood's study suggests that factors other than associative relation influence false recognition. Because of these considerations, our C words were selected so that each one of them would be similar to its experimental counterpart with respect to part of speech, frequency of usage as reflected in the Thorndike and Lorge (1944) G count, and number of syllables. In addition, the C words had to have no obvious relation to other words in the list.

The list thus contained 29 P words, 44 E words, and 44 C words. Each P word appeared three times in different positions before its E counterpart was heard. The three tokens of each P word were within 10-20 positions of each other, and the E word appeared within 18-50 positions after the last token of its corresponding P word. In the 15 cases where a single P word had two E counterparts, one A and one S, the two E words were located within 10-22 positions of each other. Each C word was within two positions of its E word, with half the C's preceding and half following the E words. The C's for A's will be referred to as CA's and those for S's as CS's. The positions of each P, E, and C word is indicated in Table 1.

In addition to words in these three categories, the list also contained 22 filler words. Of these, 20 appeared once each, one--twice, and one--three times. The fillers had no apparent relation to any of the other words in the list. They occupied positions 1-10 and other positions mostly in the first quarter of the list. The list was recorded in two orders. For the first order, the words were randomly arranged, within the constraints outlined above. The second order was identical to the first, except that the positions occupied by S's and CS's were replaced by

their respective A's and CA's, and vice versa. This interchange was, of course, possible only for the words which had common P's.

Experiment 2. In the second experiment there were 30 E words and all of them had an associative relation to the P words. The words used in this experiment and their positions can be seen in Table 2. The A's were drawn from two sources.

Insert Table 2 about here

Some were given as responses to their respective stimuli by 21%-73% of the 500 female college students in the Palermo and Jenkins (1964) norms and others by 26%-74% of the 1349 airmen in the Bilodeau and Howell (1965, Table 3) norms. The 30 E words fell into three categories in terms of their relation to P words. In 10 P-E pairs, the E words were common responses to the P words as stimuli but they did not commonly elicit the P words as responses (e.g., bitter-->sweet, P-->E). In 10 other cases, the E words commonly elicited the P words as responses but this relation was not reciprocated by the P words (light<--heavy, P<--E). Finally, in 10 cases, the associative link went in both directions (king<-->queen, P<-->E). Most of the words considered as non-associates were given by less than 10% of the respondents in the norms used and only one word reached 22% response commonality. For instance, while sweet was given by 53% of the Palermo-Jenkins Ss in response to bitter, only 2% gave bitter as a response to sweet. The words (List 1) that served as P's for about half (16) of the Ss served as E's for the rest of the Ss (18, List 2), and vice versa. In Experiment 2, as in Experiment 1, the characteristic that distinguished a P word from an E word was its ordinal position in the list: the P word came before its corresponding E word. Because each E word had a specific C word, the C's for the two lists had to be different. In Experiment 2, each P word appeared only twice. Thus, the distribution of words in the list was as follows: 60 positions were occupied by the P's, 30 by the E's, and 30 by the C's. The rest, 80 positions, were held by filler words. Thirty-five fillers appeared once each, 19--twice each, one--three times, and one--four times. The first 49 positions were taken by fillers, the rest of the fillers were

scattered throughout. The second token of each P word was within 10-20 positions of the first token, and each E word was placed 20-50 positions following the second token of its P counterpart. In other respects the design of the second experiment was similar to that of the first.

Results

Two types of errors were possible in these experiments: (a) identification of a "new" item as an "old" one (positive errors, or false recognition errors), and (b) identification of an "old" item as a "new" one (negative errors). Negative errors could have been made to the repetitions of the P words and filler words. False recognition errors could have been made to all other words. The number of errors of any kind was minimal. In Experiment 2, it amounted to 6% out of the possible number of errors, and in Experiment 1 the number of errors reached only 3%.

Our interest in this paper is focused on the comparison of the number of errors made to the E words vs. the number made to the C words. The errors made in these two categories of words can be seen in Tables 1 and 2 for Experiments 1 and 2 respectively. Inspection of the distribution of errors in Experiment 1 showed an atypically large number of errors to the P word bath (12 errors, while the next highest figure for a P word was 6) and to the CA word near (9, next highest in this category being 5). For Experiment 1, therefore, the comparisons between E and C words excluded the two rows (10 words) in which these two words appeared. After this exclusion, the t value for the S-CS comparison is 2.94 ($p < .01$, for N=28) and for the A-CA comparison, t=2.52 ($p < .02$). (Comparisons prior to the exclusions yielded a significant t(2.42) for S vs. CS but the t(1.85) for A vs. CA was not significant.) The means for the 23 entries involved in the S-CS comparison are: S=1.46, SC=.71, and the means for the 22 A-CA entries are: A=1.89, CA=1.00.

The higher error rate for the A and CA categories as compared to the S and CS categories may be due to the higher frequency of these words. While only 5 A and 5 CA words had Thorndike-Lorge frequencies under AA, 16 S words and 15 CS words fell below this level. The more frequent the words, the greater the likelihood that they will have interrelationships amongst themselves. Such relationships, beyond those under experimental control, will tend to contribute to false recognition. Generally, it is practically impossible to construct a list of 200 words which will not contain relations other than those built-in experimentally. The best one can achieve is the elimination of any glaring non-experimental relations and then depend on chance to distribute the remaining relations equally among all conditions.

In Experiment 2, the statistical analysis for the pooled data of Lists 1 and 2 reveals that significantly more false recognition errors were made to the E words than to the C words when the E words were bidirectionally associated with P words ($P \leftarrow\rightarrow E$; means: E=138, C=.82; t=2.81, $p < .01$) and when the associative link was in the forward direction ($P \rightarrow E$; E=1.47, C=.88, t=2.23, $p < .05$) but not when the association was backward ($P \leftarrow E$; E=.68, C=.50, t=.65). In separate analyses for List 1 and List 2, the pattern of results for List 2 was identical to the pattern for the pooled data but none of the E-C comparisons for List 1 reached significance.

Why wasn't the pattern of results in List 2 duplicated in List 1? It may be seen by inspecting Table 2 that the number of errors to the E words in List 1 was roughly the same as in List 2. The difference between the two lists is that the number of errors to the C words in List 1 was more than double that in List 2 for the $P \leftarrow\rightarrow E$ and $P \rightarrow E$ categories. It is possible to blame the higher error score of the C words in List 1 on gratuitous relations between some of these words and other words in the list. For instance, kind which was used as a control for the adjective fast contributed the largest number of errors (6).

This control could have been perceived by the Ss as a synonym of the noun type which appeared earlier in the list as a filler. Although such ad hoc explanations are of little value, because one can probably find some non-experimental relation for most of the words in the list, the point stands that uncontrolled (and uncontrollable) relations, whatever they are, played a role in this experiment, and could account for the disproportionate number of errors in C category of List 1.

After completion of the experiments the suspicion arose that some words may have been "misperceived." To check on this possibility, different Ss were asked to listen to the tape and to write down the words they heard. Eight Ss did this for the tape used in Experiment 1 and four for that used in Experiment 2. The "misperceptions," in most cases due to homophones, are as follows.

Experiment 1, P words: high (2 Ss, 1-hi, 1-five), bath (1-bat, 1-?); A words: die (4-dye), me (3-knee), rug (1-rub), flower (1-flour); CA words: air (1-heir), see (3-sea), near (1-mere), rough (1-?), wool (1-war, woe), grim (1-grin); S word: member (1-number); CS word: cold (1-coal).

In Experiment 2, the "misperceptions" were as follows. P and E words: me (1-?), carry (1-tarry), boy (1-buoy), blue (1-glue, 1-blew), see (3-sea), flower (1-flour), cold (1-?); C words: add (1-ad), real (1-reel), time (1-thyme), law (1-?).

It is apparent that in Experiment 1 there is a great concentration of "misperceptions" in the A category words than in the other categories. Because of this it is likely that the t value for the difference between A and C words underestimates the true contribution of associative relations to false recognition. However, this problem is not too serious for the present study because its purpose was not to ascertain the exact weight of associations in determining false recognition but rather to introduce synonymity as an additional variable.

Discussion

In interpreting the results of the second experiment it must be kept in mind that the forward (P-->E) and backward (P<--E) conditions differed not only in temporal order of the free association stimuli and responses relative to each other but also in the number of times the associative stimuli appeared. In the forward condition where the associative stimuli served as P items, they appeared twice, but in the backward condition, where they served as E items, they appeared only once. For this reason it is not possible to conclude that backward associative relations cannot produce false recognition. But we can conclude that forward relations do result in such an effect, thus establishing that initial coding plays a role in false recognition, and that it is not merely an artifact of testing for it. The discrepancy between this conclusion and Razran's is not too disturbing, because of the basic methodological flaws in his experiment, recently summarized by Feather (1965). In fact, despite the gadgetry involved in semantic generalization experiments--perhaps, because of it--it seems that the judgmental procedure employed in the present experiments taps the underlying semantic processes more directly than the semantic generalization procedure. In semantic generalization, the conditioned response transfers, according to this view, to words judged, mistakenly in the case of the test words, by the Ss (not necessarily in full awareness) as having been previously conditioned. The generalization gradient, whenever it obtains, may reflect the degree of confidence associated with such judgments. Such mistaken judgments reflect underlying processes of word coding.

What are these processes? A model is needed that would account both for the Ss' pronounced ability to recognize correctly new and old words and for the systematic false recognition errors found. It is clear that S must somehow mark off the words on the list from the tens of thousands of words in his vocabulary. This marking off may be achieved in the following way. Assume that, when activated,

the neural processes giving a word its identity leave a trace which is "dark" and "heavy" at first and with the passage of time wears out and becomes fainter and fainter. A mechanism of this sort would keep the time of words and enable S to judge each word as to whether it was heard in the experimental session or prior to it. On the basis of this information S could classify a word as new or old.

This timing notion can thus account for Ss' correct identification of words. But it cannot explain why Ss made the systematic false recognition errors described. In order to account for these errors it must be assumed that the word is not the ultimate unit of coding. If it were, associates and synonyms should not produce more errors than control words. Rather, our finding, along with the common phenomenon of paraphrasing and related observations (e.g., Broadbent, 1964; Brown and McNeill, 1966; Yavuz and Bousfield, 1959), supports the conception of words as complexes of features. According to this view, each word consists of a set of features or attributes which uniquely characterize it and distinguish it from all other words in the vocabulary system. The features are of many different kinds and involve semantic, syntactic, phonological, and for literates, orthographic aspects. For instance, the feature characterization of table would describe it as "a piece of furniture," "a noun," "having a [t] sound in initial position," "an ⟨e⟩ letter in final position," and so on. On this conception, the encoding of a word would correspond to a simultaneous activation of a set of features. Many of the semantic features and all of the features in the other three categories would be common to large segments of the S's lexicon, but some semantic features would be specific to a single item or to a small group of items (see Katz and Fodor, 1963). The general features serve to relate various lexical items to each other. For instance, many English words begin with a ⟨t⟩, and all these words constitute, in some sense, a category whose members share this feature. But the fact that a table stands at a certain height, broadly defined, in relation to its other dimensions could be thought of as an idiosyncratic feature.

Within the framework of the feature analysis, different responses to the same word share to a great extent the same processes. When a S is asked in a free association test to give the first word that comes to his mind, he focuses on some of the features of the word, perhaps the ones which appear to him most salient at the time. When he is asked to give a synonym, he focuses again on a subset of the feature complex. In this case the features relevant for the determination of the response are semantic. When he is asked to produce rhymes, he focuses on phonological features, and when asked to respond with words of the same letter length as the stimuli, he focuses on orthographic features. According to this view, associative responses and so-called categorical responses do not entail totally different processes, they result mainly from different selections of features.

The idea of feature coding can account for the false recognition errors resulting from associative and synonymy relations. When a new word is heard which shares some significant features with an old word, S may be led mistakenly to "disregard" the distinguishing features and consider the two as identical. The assumption implied here is that not all features carry equal weight. When a word is heard, some of the features potentially associated with it may not get activated and even if activated not all features leave noticeable traces.

In conclusion, we would like to restate the hypothesis that words are not stored as words but as complexes of features. When words are used they are not reproduced from memory but rather reconstructed from their component features.

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Footnote

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Table 1

Words Used in Experiment 1, Their Ordinal Positions and Number of False Recognition Errors

P's & positions of their 3rd tokens	A's & their positions[1]	Errors to A's	CA's	Errors to CA's	S's & their positions[1]	Errors to S's	CS's	
always (40)	never (74/64)	1	beside	1	forever (64/74)	1	carefully	0
black (142)	white (185/169)	4	soft	3	dark (169/185)	4	cold	1
girl (119)	boy (167/157)	6	air	5	female (157/167)	1	marble	1
chair (60)	table (88/78)	7	valley	2	seat (78/88)	0	job	2
high (132)	low (173/163)	1	ill	1	tall (163/173)	2	safe	1
king (141)	queen (181/191)	4	dance	0	ruler (191/181)	0	statue	0
live (32)	die (52/68)	1	see	3	exist (68/52)	2	inform	0
needle (129)	thread (153/175)	2	nest	3	pin (175/153)	1	jar	1
scissors (89)	cut (110/128)	0	look	0	shears (128/110)	1	brine	0
thirsty (44)	water (86/67)	3	paper	0	dry (67/86)	0	nice	0
whiskey (95)	drink (135/115)	7	spend	2	alcohol (115/135)	1	corridor	0
(bath (158)	clean (186/198)	5	small	3	shower (198/186)	3	humor	1)
(now (145)	then (176/192)	2	near	9	immediately (192/176)	2	certainly	4)
over (36)	under (61/83)	1	within	0	above (83/61)	4	early	2
tell (79)	me (107/123)	0	it	0	relate (123/107)	2	deceive	0
SUBTOTALS		44		32		24		13
anger (166)	mad (199)	1	rough	3	mad (199)	1	rough	3
carpet (159)	rug (179)	2	shed	2	rug (179)	2	shed	2
eagle (111)	bird (151)	5	guard	3	bird (151)	5	guard	3
kitten (54)	cat (100)	2	wool	0	cat (100)	2	wool	0
swift (39)	fast (58)	0	third	0	fast (58)	0	third	0
SUBTOTALS		10		8		10		8
bed (114)	sleep (149)	2	guess	0				
green (47)	grass (91)	2	heart	0				
his (97)	hers (136)	2	grim	1				
stem (35)	flower (55)	0	journal	0				
SUBTOTALS		6		1				
baby (134)					infant (160)	3	drama	1
citizen (37)					member (57)	2	winter	1
have (144)					own (193)	4	go	0
jump (49)					hop (75)	0	fetch	0
make (162)					create (182)	3	reduce	2
SUBTOTALS						12		4
GRAND TOTALS		60		41		46		25

[1] The number to the left of the slash indicates the position of the word in the first list, and the number to the right of the slash its position in the second list.

Table 2

Words Used in Experiment 2, Their Ordinal Positions and Number of False Recognition Errors

		P's & their 2nd token positions	E's & their positions	Errors to E's	C's & their positions	Errors to C's
P ↔ E	LIST 1	black (120)	white (169)	1	fine (168)	2
		boy (70)	girl (99)	1	bird (101)	0
		chair (177)	table (199)	5	duty (198)	3
		king (82)	queen (116)	0	field (118)	2
		health (127)	sickness (147)	0	aspect (148)	1
		butter (79)	bread (114)	3	fault (115)	2
		high (131)	low (164)	5	all (162)	4
		square (102)	round (142)	4	young (144)	3
		green (104)	grass (124)	6	town (122)	0
		cold (159)	hot (188)	2	full (190)	2
	LIST 2	white (120)	black (169)	1	fresh (168)	1
		girl (70)	boy (99)	0	car (101)	0
		table (177)	chair (199)	6	page (198)	1
		queen (82)	king (116)	3	star (118)	1
		sickness (127)	health (147)	0	church (148)	1
		bread (79)	butter (114)	3	evening (115)	1
		low (131)	high (164)	4	each (162)	1
		round (102)	square (142)	0	real (144)	1
		grass (104)	green (124)	1	large (122)	1
		hot (159)	cold (188)	2	just (190)	1
		SUBTOTALS		47		28
P → E	LIST 1	bitter (125)	sweet (155)	2	best (153)	0
		fingers (78)	hand (108)	1	fact (107)	1
		how (156)	now (180)	5	why (179)	2
		long (130)	short (161)	1	rich (160)	2
		swift (149)	fast (178)	5	kind (176)	6
		bloom (154)	flower (187)	7	answer (189)	4
		sky (133)	blue (166)	1	free (167)	0
		whiskey (87)	drink (121)	1	break (119)	1
		tell (62)	me (90)	0	it (91)	0
		door (96)	window (135)	0	building (136)	5
	LIST 2	appear (98)	see (138)	1	add (139)	1
		cottage (163)	house (183)	8	time (183)	1
		dream (75)	sleep (111)	4	price (113)	0
		heavy (69)	light (93)	2	stone (92)	0
		lift (72)	carry (97)	0	follow (95)	0
		loud (128)	soft (157)	4	glad (158)	1
		therefore (152)	because (181)	2	either (182)	1
		stomach (151)	food (184)	2	law (186)	1
		infant (143)	baby (174)	3	army (173)	1
		scissors (105)	cut (146)	1	ask (145)	3
		SUBTOTALS		50		30

Table 2 [Continued]

	P's & their 2nd token positions	E's & their positions	Errors to E's	C's & their positions	Errors to C's
LIST 1	see (98)	appear (138)	1	begin (139)	0
	house (163)	cottage (185)	0	feather (183)	3
	sleep (75)	dream (111)	4	grant (113)	0
	light (69)	heavy (93)	2	double (92)	1
	carry (72)	lift (97)	0	drop (95)	0
	soft (128)	loud (157)	2	fair (158)	2
	because (152)	therefore (181)	0	without (182)	0
	food (151)	stomach (184)	0	lecture (186)	0
	baby (143)	infant (174)	1	jacket (173)	0
	cut (105)	scissors (146)	0	parchment (145)	0
LIST 2	sweet (125)	bitter (155)	1	active (153)	1
	hand (78)	fingers (108)	0	corners (107)	0
	now (156)	how (180)	3	yet (179)	2
	short (130)	long (161)	6	late (160)	3
	fast (149)	swift (178)	0	cruel (176)	1
	flower (154)	bloom (187)	0	crash (189)	0
	blue (133)	sky (166)	3	art (167)	1
	drink (87)	whiskey (121)	0	antique (119)	0
	me (62)	tell (90)	0	play (91)	3
	window (96)	door (135)	0	book (136)	0
	SUBTOTALS		23		17
	GRAND TOTALS		120		75

P←E